

ABSTRACT OF DISCLOSURE

A method and system for deep trench silicon etch is presented. The method comprises introducing a reactive process gas and a Noble gas to a plasma processing system, wherein the reactive process gas comprises two or more of HBr, a fluorine-containing gas, and O<sub>2</sub>, and the Noble gas comprises at least one of He, Ne, Ar, Xe, Kr, and Rn. Additionally, radio frequency (RF) power is applied to the substrate holder, upon which the substrate rests, at two different frequencies. The first RF frequency is greater than 10 MHz, and the second frequency is less than 10 MHz.